

## Primary Problem\Objective Statement

### Water Quality

#### **Problem**

The Delta is a source of drinking water for millions of Californians and is critical to the state's agricultural sector. In addition, good water quality is required to maintain the high quality habitat needed in the Bay-Delta system to support a diversity of fish and wildlife populations. Yet, despite improvements in Bay-Delta water quality, the issue remains a primary concern in the Delta.

Pollutants enter the Delta through a variety of sources including sewage treatment plants, industrial facilities, forests, farms and farm fields, mines, residential landscaping, urban streets, and natural sources. They find their way to even the Delta's most remote areas where they interact with water, sediment, plants, and animals. The pollutants, pathogens, natural organics, and salts in Delta waters impact to varying degrees existing fish and wildlife, as well as human and agricultural use of these waters. The salts, entering the Delta through the Bay from the ocean and from agricultural returns upstream, decreases the utility of Delta waters for many purposes including agriculture, drinking water and the ecosystem. The level of natural organics in the water (mainly resulting from the natural process of plant decay on many of the Delta peat soil islands) is of concern because of the way natural organics react with other chemicals during the treatment process necessary to produce safe drinking water. During this treatment, certain "by-products" are created which may produce potentially adverse human health effects. Pathogens, which include viruses, Giardia and cryptosporidium, enter the Delta through a variety of sources and pose both human health and treatment related concerns.

**Objective**

The primary objective for water quality is to provide good quality water to better support all the beneficial uses of the Bay-Delta system. In this context, the term "beneficial uses" covers a wide range of water uses and includes fish and wildlife use, municipal and industrial use, agricultural use, recreational use, and other uses. In most cases, the specific water quality objectives for the various beneficial uses relate to reducing constituent levels. In other cases, the specific objective is to better manage water quality through a variety of measures including minimizing the cost of treating the source waters.

**Linkages**

The quantity and timing of the water flowing into and out of the Delta directly affects water quality in the Bay-Delta system. Quantity and timing are a function of the natural runoff patterns, changes in land and water use, operations of upstream water projects, diversions (upstream and in-Delta), and exports from the Delta. Thus, any modification to system operations to improve ecosystem quality or to reduce the conflict between ecosystem and water supply, will directly affect water quality for specific beneficial uses, either positively or negatively. Similarly, modifications to system operations to improve water quality will directly affect water supply reliability. This linkage is especially apparent in some reaches of the San Joaquin River within the Delta. While managing and improving water quality is a primary objective of the CALFED Bay-Delta Program, the achievement of the key specific water quality objectives is closely tied to the linkage to ecosystem and water transport.